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MODIFICATION OF TEACHING PRACTICES AND COURSE CONTENT IN HIGH SCHOOL PSYCHOLOGY. FINAL REPORT.

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THIS STUDY WAS CONDUCTED TO DETERMINE IF A 2-WEEK WORKSHOP IN EXPERIMENTAL PSYCHOLOGY FOR HIGH SCHOOL TEACHERS WOULD SIGNIFICANTLY MODIFY THEIR TEACHING PRACTICES AND CONTENT EMPHASES. THE SPECIFIC HYPOTHESES CONCERNING HIGH SCHOOL TEACHERS OF PSYCHOLOGY COMPLETING A 2-WEEK WORKSHOP IN EXPERIMENTAL PSYCHOLOGY WERE THAT THE TEACHERS WILL (1) SIGNIFICANTLY MODIFY THE CONTENT OF THEIR COURSES IN THE DIRECTION OF EXPERIMENTAL RESEARCH ORIENTATION DURING THE FOLLOWING YEAR AND (2) INCLUDE MORE EXPERIMENTS, DEMONSTRATIONS, AND FILMS THAT WILL EMPHASIZE PSYCHOLOGY AS A LABORATORY SCIENCE. THE HYPOTHESES WERE TESTED USING A SINGLE GROUP OF EIGHT EXPERIENCED PSYCHOLOGY TEACHERS IN A PRE- AND POST-TEST DESIGN. AN INVENTORY OF TEACHING METHODS AND COURSE CONTENT EMPHASES WAS EMPLOYED TO DETERMINE THE NATURE OF THE COURSES TAUGHT IN THE ACADEMIC YEAR PRECEDING THE WORKSHOP AND THE ACADEMIC YEAR FOLLOWING THE WORKSHOP. THE WORKSHOP ACTIVITIES INCLUDED THE PREPARATION OF DEMONSTRATIONS AND EXPERIMENTS APPROPRIATE FOR HIGH SCHOOL STUDENTS, VIEWING INSTRUCTIONAL FILMS, AND GROUP DISCUSSIONS OF COURSE ORGANIZATION, AND THE NATURE OF SCIENCE. SIGNIFICANT DIFFERENCES WERE OBTAINED FOR BOTH HYPOTHESES. THERE WAS SIGNIFICANTLY MORE EMPHASIS ON PSYCHOLOGY AS A SCIENCE, THE HUMAN ORGANISM, AND LEARNING. SIGNIFICANTLY LESS EMPHASIS WAS GIVEN TO THE TOPIC OF ADJUSTMENT AND MENTAL HEALTH. TEACHING PRACTICES WERE MODIFIED TO INCLUDE SIGNIFICANTLY MORE LABORATORY DEMONSTRATIONS, EXPERIMENTS, AUDIOVISUAL AIDS, AND REFERENCE MATERIALS. (TC)

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FINAL REPORT

Project No. S-207

Contract No. OE-5-10-327

Modification of Teaching Practices and Course Content in High School Psychology.

Final Report

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The research reported herein was performed pursuant to a contract with the Office of Education, U.S. Department of Health, Education, and Welfare. Contractors undertaking such projects under Government sponsorship are encouraged to express freely their professional judgment in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent official Office of Education position or policy.

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The purpose of this study is to determine the effect of a two-week workshop in experimental psychology on the teaching practices and course content of high school classes in psychology. More specifically, it intended to discover if such an experience for teachers will significantly increase their emphasis on psychology as a science founded on research and experimentation.

The desirability of influencing the teaching of psychology in high schools in the direction of a laboratory science has generally been accepted by committees representing both the Michigan Psychological Association and the American Psychological Association. As early as 1937 an APA committee recommended the development of a laboratory manual to be used in high school psychology classes (10). A survey of the literature reveals a number of articles relating to the teaching of psychology at the secondary level. Several studies relate to findings of surveys regarding course objectives, course content, teaching methods, and professional training of the teachers in psychology courses.

A paper presented at the 1961 Convention of the American Psychological Association by S.C. Ratner described the procedures used and results obtained from an effort to bring a select group of high school science teachers into contact with experimental psychology. These teachers were selected to participate in a Traveling Science Teacher Program. They were trained to use various demonstration materials which could be presented in the course of their lecture-demonstration programs. As judged by the frequency with which the demonstrations were used, Ratner considered the program a success.

In 1965, Snellgrove (9) and Engle (5) presented papers at the APA Convention. Snellgrove stressed the "need and value of communications on laboratory equipment" for high schools. Engle's paper compared the responses of high school teachers of psychology with the responses of professional psychologists to a questionnaire relative to the desirable objectives and subject matter areas to be stressed in high school psychology. The data reveal that the "professionals" would encourage more stress on science and learning with considerably less stress on personal problems. The opposite emphasis exists for high school teachers of psychology. The concern of the American Psychological Association for this problem is reflected in a recent article by Abrams and Stanley (1). Their article is entitled "Preparation of High School Psychology Teachers of Colleges."

This study is designed to provide evidence regarding the probability of changing psychology courses now being presented to high school students in the desired and predicted direction via short term workshops for high school teachers.

The specific hypotheses to be tested are:

1. High school teachers of psychology completing a two-week workshop in experimental psychology will significantly modify the content of their courses in the direction of an experimental-research orientation during the following year.

2. High school teachers of psychology completing a two-week workshop in experimental psychology will significantly modify their teaching practices to include more experiments, demonstrations, and films that will emphasize psychology as a laboratory science.

Method

The basic design for this study includes one group of subjects who served as their own controls. Data regarding teaching practices and course content used during the previous year, plus plans for course modification, were collected from each participant at the first workshop session. At the final session of the workshop the participants were asked to again describe any changes they intended to make in their handling of their psychology course the next year. These verbalized statements were accepted only as an indication of "intent to change". The final test of the hypothesis was made by obtaining a complete description of the teaching practices and course content that actually were used in the year following the workshop. These data are compared with the data collected at the initial session of the workshop in order to test the hypotheses.

The subjects for this experiment were eight high school teachers who had taught psychology at the secondary level within the past year and who were scheduled to teach it again in 1965-1966.

The workshop was advertised as a "Workshop for High School Teachers of Psychology". The general nature of the workshop was announced. The specific research purposes were not revealed. A generalized description of the workshop emphasized the possibilities of developing new instructional materials, previewing instructional films, sharing insights and problems with fellow teachers of psychology, and using the help of professional consultants.

The specific organization of the workshop required six (6) hours of work per day for ten (10) days. Participants prepared, conducted, and participated in experiments and demonstrations that would be appropriate for use in teaching psychology in high school.

In order to stimulate and direct the work of the participants, one hour each day was spent in viewing and discussing a different film from the series "Focus on Behavior". These films depict the work of outstanding experimental psychologists and cover a wide range of topics of concern to psychologists.

Two different devices were used to collect the data for this study.

1. The device used in the "pre-test and post-test" was an inventory designed to reveal the teaching methods employed, instructional materials used, and the course content covered in the course.

2. The written statement from each participant to be obtained at the initial and final workshop sessions respectively, was a response to the questions: "What changes, if any do you intend to make in conducting your psychology classes next semester?" and "What changes, if any do you intend to make in conducting your psychology classes next semester as a result of this workshop experience?"

A panel of five psychologists analyzed the two written statements of each participant and judged the direction of "intended changes" indicated for each.

The hypotheses were tested by means of the sign test and the nature of the significant changes were identified for the data collected via the inventory.

Results

The data collected for this study are summarized in three tables. Table I presents the judgments of the five professional psychologists relative to apparent movement by the workshop participants toward a more scientific orientation for their high school psychology courses. Tables II and III present the actual changes in their psychology courses as reported by the workshop participants. Table II reflects the changes in teaching methods. Table III shows the changes in time and emphasis given various content areas normally covered in the high school psychology course.

TABLE I

Judges Ratings of Movement Toward Scientific Orientation

Subject	Judges				
	1	2	3	4	5
A	+	+	+	+	+
B	+	+	+	0	+
C	+	+	+	+	+
D	+	+	+	0	+
E	+	0	+	0	+
F	+	+	+	+	+
G	+	+	+	+	+
H	+	+	+	+	+

TABLE II

Change in Frequency of Use for Various Teaching Methods

Method	Less	No Change	More	Significance
Lecture	0	6	2	N.S.
Discussion	0	7	1	N.S.
Reports	1	5	2	N.S.
Projects	1	5	2	N.S.
Demonstration	0	0	8	.01
Experiments	0	4	4	N.S.
Field Trips	2	6	0	N.S.
Audio-Visual Aids	0	3	5	.05
Textbook	1	7	0	N.S.
References	1	1	6	.01

TABLE III

Change in Time and Emphasis given
Various Topics in Psychology Course

Topic	Less	No Change	More	Significance
Psychology as a science	0	0	8	.01
Human Organism	0	2	6	.05
Growth and Development	2	3	3	N.S.
Motivation	3	4	1	N.S.
Feeling and Emotion	2	6	0	N.S.
Adjustment and Mental Health	5	3	0	.05
Learning	1	0	7	.05
Memory	0	4	4	N.S.
Thinking, Language, & Problem Solving	1	4	3	N.S.
Statistics	1	4	3	N.S.
Psychological Measurement	2	4	2	N.S.
Personality-Measurement & Theory	1	3	4	N.S.
Group Dynamics	1	5	2	N.S.
Vocational Applications	2	4	2	N.S.

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Discussion

Inspection of Table I should be sufficient to indicate the apparent movement of the workshop participants toward a more science-oriented presentation of a course in psychology. The statistical test for the data substantiates the initial impression by providing a significance level of .01.

The primary purpose of checking the future plans of the teachers before and after the workshop was to control for course changes that may have occurred without the workshop experience. The analysis of the inventory provides evidence relative to "real change" vs. "projected change".

Table II, reporting the post-workshop use of various teaching methods, indicates three methods for which a significant change took place. More use was made of laboratory demonstrations, reference journals and books, and audio-visual aids. Four of the eight participants increased their use of laboratory experiments. This is an encouraging trend though not statistically significant. Several of the respondents explained that there was no change because available facilities did not permit actual experimentation. These data support the hypothesis relative to a modification in teaching practices.

The findings relative to time an emphasis given to various topics in the psychology course are reported in Table III. Psychology as a science received increased emphasis at the .01 level of confidence. Increased emphasis at the .05 level was given for the topics: human organism and learning. There was a significant decrease at the .05 level of confidence in the emphasis on adjustment and mental health. These changes are congruent with the expressed views of psychologists relative to the desirable objectives for such a course. The data support the first hypothesis that course content will be significantly changed by such an experience.

The data support both hypotheses and indicate that significant changes can be made in both teaching methods and course content in high school psychology. However, it must be recognized that the sample was limited to eight participants. They were conscientious teachers who were eager to improve their courses. The instructor worked closely with the participants and reflected a science-oriented attitude along with an intense interest in the work they were doing. These ingredients may be essential to obtain such changes. Furthermore, it is possible that despite requests for objectivity and honesty in completing the inventories, plus the disquising of the project's objectives, the participants reflected the instructor's attitudes and the

workshop content more than was justified by their actual practice.

Despite these limitations there are several reasons to believe that the results are valid. The participants unanimously agreed that this was the first time they had had the opportunity to work with such a group to seriously consider matters of course objectives, teaching methods, course content, etc. They emphasized the fact that they had no guidelines other than textbooks. They had no course work for teaching psychology as either a science or social science. They had found very little material (laboratory manuals, film strips, films or laboratory equipment) appropriate for the high school student. It seems probable that even such limited experience as was provided by the workshop was sufficient impetus for a real change.

Conclusions and Implications

The possibility of producing significant modifications in both teaching methods and content emphasis in high school psychology through short-term workshops is indicated by this study. Both hypotheses were supported by statistically significant changes. The predicted direction of change toward an increased emphasis on psychology as a science founded on research and experimentation was obtained.

The implication of these results suggests that concerted efforts by concerned and interested agencies could be of significant influence in modifying current practice in the teaching of high school psychology. Such efforts might include the development of appropriate curriculum guides, recommended reference materials and audio-visual aids, laboratory manuals and inexpensive laboratory equipment, and pre-service or in-service training programs for teachers of psychology. The combined efforts of the American Psychological Association, National Science Foundation, U.S. Office of Education, and psychology departments in our colleges and universities could have a major impact on the nature and quality of education in psychology at the secondary level.

Summary

This study was conducted to determine if a two-week workshop in experimental psychology for high school teachers would significantly modify their teaching practices and content emphases. The specific hypotheses were:

1. High school teachers of psychology completing a two-week workshop in experimental psychology will significantly modify the content of their courses in the direction of an experimental research orientation during the following year.

2. High school teachers of psychology completing a two-week workshop in experimental psychology will significantly modify their teaching practices to include more experiments, demonstrations, and films that will emphasize psychology as a laboratory science.

The hypotheses were tested utilizing a single group of eight experienced psychology teachers in a pre-test post-test design. An inventory of teaching methods and course content emphasis was employed to determine the nature of the course in the academic year preceding the workshop and the academic year following the workshop. An "open-end" question relative to anticipated changes in the course was utilized just prior to the workshop to control for anticipated changes that might have occurred regardless of the workshop experience. A similar question was asked following the workshop to determine the intended changes that may have been the consequence of workshop participation. The workshop activities included the preparation of demonstrations and experiments appropriate for high school students, viewing instructional films, and group discussion of course objectives, course organization, and the nature of science.

Significant differences were obtained for both hypotheses. There was significantly more emphasis on psychology as a science, the human organism, and learning. Significantly less emphasis was given to the topic of adjustment and mental health. Teaching practices were modified to include significantly more laboratory demonstrations, audio-visual aids, and reference materials. More experiments were included by half of the participants.

These findings suggest that high school teachers will provide a scientific orientation for their psychology courses when they know how to do it. This indication has significance for colleges and universities preparing teachers of psychology and for other agencies (eg. NSF, USOE, and APA) who are concerned with the nature and quality of instruction. Cooperative efforts by these agencies and institutions could well provide the necessary training experiences, laboratory materials, curriculum guides, and reference sources that high school teachers need to perform their task well.

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